required. The formal drawings will be submitted at such time as one or more claims are allowed.

Claims 1-30 stand rejected under 35 U.S.C. § 102(e) as being considered to be anticipated by U.S. Patent No. 5,987,086 to Raman et al. ("Raman").

Claim 1 includes the limitations

> identifying partial feasible routing solutions corresponding to each of a subset of a set of wires to be routed;
> merging the partial feasible routing solutions to identify one or more feasible routing solutions for the set of wires to be routed.

(Claim 1)(emphasis added).

Applicants respectfully submit that Raman fails to teach or suggest the claimed features of applicants' invention including at least identifying partial feasible routing solutions and then merging the partial feasible routing solutions to identify one or more feasible routing solutions for a set of wires to be routed.

Raman discloses an approach geared towards interconnecting transistors and other devices in order to optimize the area of a layout cell while honoring performance constraints. (Raman, Abstract). In accordance with Raman, cells and devices are routed in a number of passes depending on the type of routing to be performed. For example as described at column 33, line 52 – column 34, line 65 in reference to Figure 29, a pre-routing process in which, after providing information such as transistor and port locations, net criticalities, routing layer costs, via costs, and process technology information, adjacent transistors are routed using diffusion interconnects, power/ground nets are routed, aligned gate interconnects are routed, and special nets are routed.

Continuing at column 35 in reference to Figure 28, routing channels are then identified, routing density is calculated and initial spacing of channels is determined. Detail routing of all remaining nets is then performed (col. 35, line 37).

In accordance with Raman, the router orders proposed interconnects based on an assigned numerical weight. Interconnects with a higher numerical weight are processed first and those with lower weights are processed last (col. 35, lines 62-66). As set forth in Raman, these nets are routed sequentially (col. 35, line 64). As is well known in the art, sequential routing means that one net is routed, and then the next net is routed. Per Raman, by using this procedure, critical nets have a better chance of being routed with shorter wire spans and in layers of lower resistivity (col 35, line 66 – col. 36, line 2).

The routing is performed using a coarse routing pass in which it is assumed that there is only one layer of routing. Then wire groups are assigned to routing layers (col. 36, line 44) and an improved routing and via minimization step is performed (col. 36, lines 64-66). As described in Raman, due to the sequential nature of the routing methodology, it is possible that some interconnects can be routed in a better fashion in order to optimize the routing cost. To explore this, interconnects are removed one at a time in order of their criticality and rerouted to obtain better routes (i.e. ripped up and re-routed). (Raman, col. 36, line 64 – col. 37, line 4).

In contrast, claim 1 sets forth identifying partial feasible routing solutions and then merging the partial feasible routing solutions to identify one or more

feasible routing solutions for a set of wires to be routed. As described in the specification beginning at page 4, line 22, "A partial feasibl routing solution, as the term is used herein, r fers to an intermediate routing solution for fewer than all of the wires to be routed while a feasible routing solution is a routing solution for all of the wires to be routed. A routing solution is feasible if it defines a route between the desired terminals or pins while avoiding obstacles and otherwise meeting specified design rules. "

not in page 4

By identifying partial feasible routing solutions and then merging them to identify one or more feasible routing solutions as set forth in claim 1, it may be possible to avoid ripping up already routed wires and re-routing them as in Raman.

Raman does not teach or suggest merging identified partial feasible routing solutions to identify one or more feasible routing solutions. As clearly described in Raman at, for example, col. 35, line 64 and col. 36, lines 66-67, Raman uses a sequential routing approach in which one net is routed and then another net is routed. Using a sequential routing approach, there is no merging of partial feasible routing solutions to identify a feasible routing solution as set forth in the claims. For this reason, Raman also does not suggest the claimed features of applicants' invention.

For at least the foregoing reasons, claim 1 is patentably distinguished over Raman.

Independent claims 9, 15, 20, 22 and 27 each include limitations similar to those argued above in reference to claim 1. Claims 2-8, claims 10-14, claims

16-19, claim 21, claims 23-26 and claims 28-30 depend from and limit claims 1, 9, 15, 20, 22 and 27, respectively. Thus, claims 2-30 are also patentably distinguished over Raman for at least the same reasons.

Raman also does not teach or suggest limiting the number of partial feasible routing solutions as set forth in claims 5, 17 and 24, or providing a routing tree as set forth in claims 9, 18 and 25.

Applicants respectfully submit that the applicable objections and rejections have been overcome and claims 1-30 are in condition for allowance. If the examiner disagrees or believes that further discussion will expedite prosecution of this case, he is invited to telephone applicants' representative at the number indicated below.

If there are any charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

Dated: Dec. 4, 2002

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